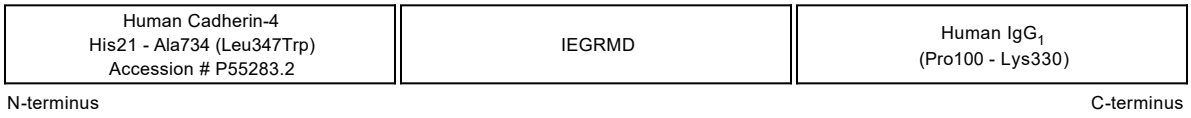
Recombinant Human Cadherin-4/R-Cadherin Fc Chimera

Catalog Number: 2217-CA

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived



N-terminal Sequence Analysis	His21
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	78.5 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	120-140 kDa, reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of dissociated E13 chick embryonic dorsal root ganglia (DRG) neurons. Able to significantly enhance neurite outgrowth when immobilized at 3 µg/mL on a 96-well tissue culture plate.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in Tris-Citrate and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The cadherin superfamily is a large family of membrane-associated glycoproteins that engage in both homo- and heterotypic, calcium-dependent, cell-cell adhesion events. The superfamily can be divided into at least four subfamilies based on its member's extracellular (EC) regions and cytoplasmic domains (1, 2). These include classical cadherins, desmosomal cadherins, protocadherins, and cadherin-like molecules that contain a variable number of EC and transmembrane (TM) domains (1). Cadherin-4, also known as R-cadherin, is a classical cadherin of 120 - 140 kDa (3, 4). Human Cadherin-4 is synthesized as a 916 amino acid (aa) type I transmembrane glycoprotein that contains a 20 aa signal peptide, a 149 aa prosequence, a 565 aa extracellular region (EC), a 22 aa transmembrane segment, and a 160 aa cytoplasmic domain (5, 6). There are five EC cadherin domains that are approximately 110 aa in length. This pattern is consistent with classical cadherin family molecules that are modular in their extracellular region and mediate calcium-dependent cell-cell adhesion through their Ca^{++}-binding repeats (2). One potential Cadherin-4 splice variant involves the preprosegment and shows 32 aa substitution for theN-terminal 124 amino of the full-length precursor (7). The extracellular region of human Cadherin-4 is 96% aa identical to mouse Cadherin-4 extracellular region (3). Cadherin-4 is expressed in vascular smooth muscle (8), pancreatic β-cells (9), thyroid follicular cells (10), bone marrow Lin^- HSCs (11), sensory neurons of the dorsal root ganglia (12), and, possibly, astrocytes and endothelium of the retina (13). As a classic cadherin, Cadherin-4 will form both homodimers and heterodimers with N-cadherin (4, 14). These complexes translate into adhesion multimers in cis- and trans-configurations. Such structures serve to both unite adjacent cells, and provide guidance for migrating cells/processes (13). Additionally, R-cadherin is associated with cell quiescence, as a loss of cell Cadherin-4 expression is correlated with cell proliferation (8). Finally, R-cadherin is reported to bind to KLRG1 (killer cell lectin-like receptor G1). This inactivates NK cell cytotoxicity, and provides protection for R-cadherin expressing cells (15).

References:

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